

1. JP,3475304,B

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**CLAIMS**

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(57) [Claim(s)]

[Claim 1] It has the 1st information on a card proper, and security information to the magnetic information Records Department. It is the card which has the 2nd information which is possible for the contents of the information which is recording methods other than the MAG and was recorded on the 2nd information Records Department, and cannot carry out visual distinction of them. The 1st information of the above, and the 2nd information of the above, [ of machine reading ] The card with which information is characterized by being said security information as a result of carrying out data processing of three kinds of information on the personal identification number which a just cardholder memorizes with a fixed algorithm and being obtained.

[Claim 2] The card according to claim 1 characterized by the above-mentioned 2nd information Records Department consisting of a hologram which has the 2nd information as a hologram reconstruction image.

[Claim 3] a card according to claim 1 or 2 and the use terminal which a card user uses -- since -- a use terminal The 1st information recorded on the magnetic information Records Department of said card, and the 2nd information recorded on the 2nd information Records Department by recording methods other than the MAG, The 1st information and 2nd information that the security information recorded on the magnetic information Records Department was read and read, The card security system a card user judges that is a just cardholder when information is collated with said security information and it is in agreement as a result of carrying out data processing of three kinds of information on the personal identification number inputted by the card user with a fixed algorithm and being obtained.

[Claim 4] The 1st information on the card proper recorded on the magnetic information Records Department of a card, and security information, The 2nd information which is possible for the contents of the information which is recording methods other than the MAG recorded on the 2nd information Records Department of said card, and was recorded, and cannot carry out visual distinction of them, [ of machine reading ] Four kinds of information on the personal identification number inputted into a user terminal from a card user is used. The card security approach that a card user judges that three information on the inputted personal identification number, said 1st information, and said 2nd information is just cardholders when information is in agreement with said security information as a result of carrying out data processing and being obtained with a fixed algorithm.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Industrial Application] In case this invention uses user terminals, such as CD and ATM, using cards, it acquires unjustly the personal identification number which a user inputs especially from a communication line about the card suitable for identifying a just cardholder, a card security system, and its approach, and relates to the safe card which forges a card and is not abused, a security system, and its approach.

[0002]

[Description of the Prior Art] Conventionally, in ATM card dealings, such as a bank, the user put the card into user terminals, such as CD and ATM, is inputting the personal identification number which a user's memorizes further, and has acquired the authentication as an owner of a just card. On the other hand by the user-terminal side, a user's inputted personal identification number with card proper information, such as the account number currently recorded on the card A public line or a dedicated line is used for a host computer, and it transmits to it. A host computer Judging from the transmitted account number, the account number to which the group of a personal identification number has carried out record-keeping of whether it is the right, and a personal identification number, if right The user who is going to do current use answers a letter in the purport which is a just cardholder, and the user terminal is performing predetermined card transaction processing to the user-terminal side according to this.

[0003]

[Problem(s) to be Solved by the Invention] However, the above user terminals and host computers are tied with a circuit, and data communication is performed also for the personal identification number which the user has memorized via the circuit with card proper information in the system which attests whether a user is a just cardholder. By for this reason, the thing for which a hacker etc. intercepts and analyzes the signal concerning the customer dealings data by which data communication is carried out from a circuit using a wiretap If the account number etc. and a personal identification number can be acquired unjustly and a card is forged based on this The counterfeit card may have been made and abused comparatively simply, without noticing that it was forged by the card user, without the original card coming to hand without knowing when it intercepted. For this reason, even if it should have carried out or should have been intercepted that it carries out carrying out underground laying under the ground of the communication line etc., and a wiretap is hard to be devised, correspondence of enciphering the data transmitted and received by various approaches had also been carried out so that safely, but it was a tapping side, and once the algorithm of a code was analyzed, reservation of safety becomes impossible and was not perfect. Such a thing originates in data communication of the information on a personal identification number which a host computer and a user understand being carried out via a communication line. But by the conventional magnetic-recording method, although recording a personal identification number on the card itself, without transmitting by the circuit was also considered, when getting even the card, a personal identification number will be easily used by stealth by the magnetic card reader writer, and it was not able to be said by it that it was practical.

[0004] Then, it is offering the card with high safety whose judgment of a just cardholder data tapping which solved the conventional fault like \*\*\*\* is completely impossible for the purpose of this invention, severs the way of card counterfeiting based on this, and is attained, a card security system, and the card security approach.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the card of this invention It has the 1st information on a card proper, and security information to the magnetic information Records Department. It is the card which has the 2nd information which is possible for the contents of the

information which is recording methods other than the MAG and was recorded on the 2nd information Records Department, and cannot carry out visual distinction of them. The 1st information of the above, and the 2nd information of the above, [ of machine reading ] As a result of carrying out data processing of three kinds of information on the personal identification number which a just cardholder memorizes with a fixed algorithm and being obtained, information considers as the configuration which is said security information. Moreover, in the above-mentioned card, it considers as the configuration which consists of a hologram in which the above-mentioned 2nd information Records Department has the information in which machine reading is possible as a hologram reconstruction image.

[0006] Moreover, the card security system of this invention the above-mentioned card and the use terminal which a card user uses -- since -- a use terminal The 1st information recorded on the magnetic information Records Department of said card, and the 2nd information recorded on the 2nd information Records Department by recording methods other than the MAG, The 1st information and 2nd information that the security information recorded on the magnetic information Records Department was read and read, As a result of carrying out data processing of three kinds of information on the personal identification number inputted by the card user with a fixed algorithm and being obtained, when information is collated with said security information and it is in agreement, it is the system a card user judges that is a just cardholder.

[0007] Moreover, the 1st information on a card proper that the card security approach of this invention was recorded on the magnetic information Records Department of a card, The 2nd information which is possible for the contents of security information and the information which is recording methods other than the MAG recorded on the 2nd information Records Department of said card, and was recorded, and cannot carry out visual distinction of them, [ of machine reading ] Four kinds of information on the personal identification number inputted into a user terminal from a card user is used. It is the approach a card user judges that three information on the inputted personal identification number, said 1st information, and said 2nd information is just cardholders when information is in agreement with said security information as a result of carrying out data processing and being obtained with a fixed algorithm.

[0008]

[Function] According to the card, card security system, and the card security approach of this invention, the personal identification number used as the key information a card user judges that he is a just cardholder to be is not transmitted via the telephone line etc., and the judgment of it is possible within a user terminal. And the information used in order to judge the justification of a personal identification number is recorded on the 2nd information Records Department [ / in addition to a magnetic-recording method ], the starting information is invisible and the 2nd information recorded there cannot be acquired easily. And it is judged by whether the justification of a personal identification number is in agreement with the security information by which information was recorded on the magnetic information Records Department as a result of carrying out data processing of three kinds of information on the personal identification number inputted into the user terminal, and said 1st information and this 2nd information with a fixed algorithm and being obtained. Although the security information recorded on the magnetic information Records Department is easily acquirable rather information Even if acquired unjustly, since the relation between a personal identification number, the 1st information, the 2nd information, and security information is based on a certain fixed algorithm, security information to the top where acquisition of the 2nd information is difficult It is difficult to draw a personal identification number from the 1st information and security information, and even if the 2nd information is acquired by injustice, it will be difficult to reverse-calculate data processing of an algorithm and to draw a personal identification number.

[0009]

[Example] Hereafter, the card of this invention, a card security system, and the card security approach are explained in full detail.

[0010] Drawing 1 is an explanatory view explaining the card, card security system, and the card security approach of this invention. On a card 1, it has the magnetic information Records Department 2 by the usual magnetic-recording method, and the 2nd information Records Department 3 of invisibility [ contents / of the information which is methods other than a magnetic method and was recorded ]. And if it is an ATM card, the 1st information B on a card proper which consists of a card user's silver line number, a branch number, the account number, etc. is recorded on the magnetic information Records Department 2. Moreover, security information D which has the relation mentioned later is also recorded on the magnetic information Records Department 2. Moreover, the 2nd information A which is used by the operation of a fixed algorithm and which consists of code information or image information is recorded on the 2nd information Records Department 3.

[0011] And the personal identification number C which a just cardholder remembers to be the 2nd information A, the 1st above-mentioned information B, and above-mentioned security information D has a certain relation [ \*\*\*\* ]. As a result of performing data processing according to \*\*\*\*, and the 2nd information A, the 1st information B and three kinds of information on a personal identification number C to a certain fixed algorithm, for example, encryption processing, information serves as a card which has the relation of information which is in agreement with security information D currently recorded on the magnetic information Records Department.

[0012] If the relation of these 4 person's information is expressed with a formula, it will become  $A*B*C=D$  (\* expresses data processing by a certain fixed algorithm). In addition, although it also has the semantics which carries out data processing of information and C with a still more fixed algorithm as a result of "A\*B\*C's" performing data processing of A\*B and being obtained, the sequence of an operation over A, B, and C is arbitrary, and it is not restricted especially. Moreover, three persons can be calculated as A\*B, B\*C, and A\*C, respectively. Moreover, when the informational context which comes to an operator "\*" front and the back becomes reverse, there may also be an operation from which the result of an operation differs. In short, the semantics which calculates using A, and B and C is expressed.

[0013] Security information D is equivalent to information, as a result of performing data processing according to the 2nd information A, the 1st information B, and three kinds of information on a personal identification number C to a certain fixed algorithm, but if all of said three kinds of information are numeric values and the result of an operation is also a numeric value for example, the check digit information drawn from each digit of the numeric value of the result of an operation is sufficient as security information. Moreover, security information does not necessarily need to be a thing including all the information on the data-processing result of three kinds of said information. However, data processing of extracting a part of information on the result of an operation such even case can be understood to give and to be.

[0014] Even if the 2nd information A is easily acquired by the inaccurate user and he does not show a personal identification number C, a reverse operation will be carried out from the 2nd information A on two or more cards which carried out unjust acquisition, the 1st information B, and security information D, or if it is the easy algorithm with which a fixed algorithm can be analyzed by the personal identification number generated at random by trial-and-error using the personal computer, security will fall. Therefore, as for data processing described above, it is desirable to usually use special data processing currently used as encryption processing etc.

[0015] Moreover, the 2nd information Records Department where the 2nd information is recorded shall not carry out visual distinction, but shall be based on methods other than a magnetic-recording method in that reading by the same method as the magnetic-recording section is made difficult. The thing of the gestalt in which various machine reading, such as a code pattern formed in the ink of machine reading becoming possible only when light other than the lights, such as what concealed impossible [ viewing of a bar code ] as the 2nd information Records Department, for example, the hologram in which machine reading is possible and ultraviolet rays, and infrared radiation, is irradiated from such a point which cannot be viewed, is possible can be used.

[0016] The hologram which has also in the above the image information in which machine reading is possible as a reconstruction image as the 2nd information Records Department is desirable. It is because a special reader cannot be needed, equipment cannot come to hand easily for example, in order to read information, such as code information, so reading becomes difficult from such a hologram, then the starting image information.

[0017] Furthermore, if encipher the 2nd information recorded on the 2nd information Records Department with a predetermined algorithm, and it records or data scramble processing is carried out by the reading processing process of equipment, even if a reader is able to come to hand, security can be made high more.

[0018] It is obtained and made \*\* of a more than, and if the personal identification number which the just cardholder has memorized is inputted into a user terminal, a user terminal can judge a card user's justification uniquely, without borrowing the assistance of a host computer. And if a user terminal judges that a card user is a just cardholder, it is a user-terminal side, or after performing a host computer and predetermined data communication, card use will be attested to a user by the host computer side, and a user terminal will perform processing which a card user demands. In addition, even when the final dealings acknowledgement to a card user is original with a user-terminal side, it is possible, but when performing final dealings acknowledgement by the host computer side, it can perform dealings acknowledgement based on being a right holder of card use by another selection criterion in addition to the starting card user being a just owner of the card. This becomes effective, when a card is lost and dealings halt processing is performed

by the host computer side about the card concerned.

[0019]

[Effect of the Invention] As explained in full detail above, according to the card of this invention, a card security system, and the card security approach, it becomes a card suitable for enabling the judgment of a just cardholder with very high safety. As a card, even if a card comes to hand unjustly, it is impossible for the information on a personal identification number not to be recorded, but for it to be able to know to a personal identification number. Moreover, even if a personal identification number comes to hand unjustly, unless the card which has the Records Department other than the magnetic-recording method concerned should also come to hand, unjust use of a card is impossible. Moreover, even if the 1st information and security information which are the information on a card proper come to hand unjustly, acquisition of the 2nd information is difficult and the 2nd information also comes to hand, unless an algorithm fixed for a personal identification number coming to hand is acquired from these three kinds of information, it will be impossible, and will be very difficult. Moreover, if the hologram in which machine reading is possible is used for the 2nd information Records Department, if unjust acquisition of the 2nd information currently recorded on the 2nd information Records Department does not receive the equipment of the dedication which reads information in the reconstruction image of a hologram, it will be impossible, and acquisition of the 2nd information will become very difficult.

[0020] It has the effectiveness described above as a card security system as a card which constitutes it. Moreover, since it is judged \*\* it does not carry out data communication of the personal identification number from which a card user becomes the key information on the judgment of the justification that he is the just owner of a card, as a user-terminal side to a host computer by the communication line, unjust acquisition of the information by tapping of a communication line becomes completely impossible, and the forgery of an inaccurate card based on tapping data can be prevented completely, and serves as a system with very high security to tapping. Moreover, if the hologram in which machine reading is possible is used for the 2nd information Records Department, if reading of the information recorded on the 2nd information record does not receive special equipment, it cannot be performed, but will become what has security high also as a system.

[0021] As the card security approach, tapping by the data communication process can prevent completely so that it may describe above, and also Relation is judged by data processing according four kinds of information to some fixed algorithms, such as encryption processing. A personal identification number is the storage information of just card users other than a system among such information, and the 2nd information is made into the information which cannot be read easily except a magnetic-recording method. These and regarding the place and since it is distributing on the record formal target The judgment of whether a card user is a just cardholder will have very high security.

[0022] Furthermore, according to the card of this invention, a card security system, and the card security approach Were possible with the card of the conventional magnetic-recording method it is not only effective for the cure against tapping of above-mentioned data communication etc., but. Unjust acquisition of a user's account number is carried out after dealings at the corner of CD or ATM from the receipt (use detail vote) which the user discarded to the garbage can etc., it is tried further to steal a personal identification number at the time of dealings, and improper use of drawing out cash by the counterfeit card can be prevented certainly.

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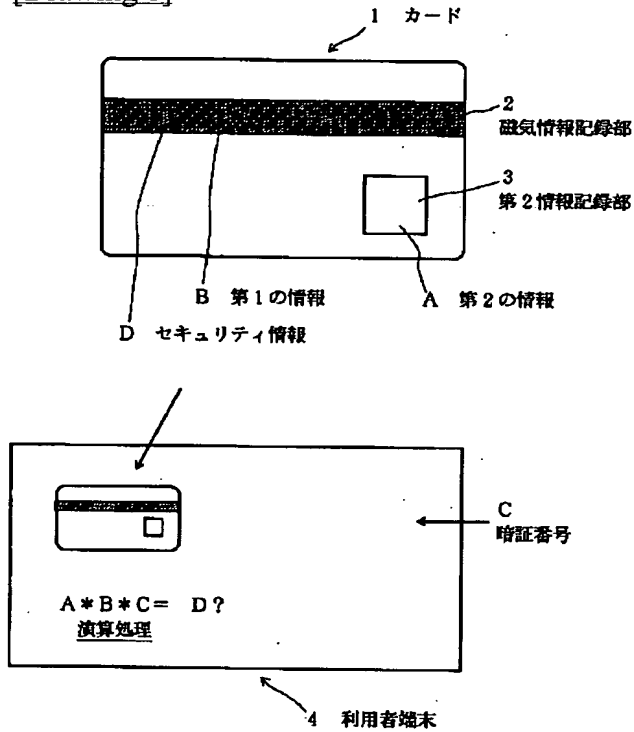
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DRAWINGS

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[Drawing 1]



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